

at the truck sounds. (It used by millions of GIs their hearing.)

al Damage. "Stress," says Belye of the University of a world authority on the comes dangerous when it prolonged, comes too of-centrates on one particu-of the body." The body, loses its ability to resist able to deal with danger. he Korean war, a favor-used by the North Ko-veaken the resistance of Is was to put upended er their heads and bang with a stick. This clang-a combination of noise ed on fright and anxiety, an spirits more rapidly arvation, cold or the non-egree.

ly, noise by itself would e a well-adjusted person. ned with other stress fac-tic, financial or health the "triggering trauma" al as well as organic re-us in New York City a d out-of-patience house-ed about a sick husband, bucket of water, on the n when he ignored her quests to juggle the gar-nore gently. And a man ar-old boy playing in the se shouting, combined ffic noise, was making it for him to sleep.

leep. Noise does not relax you even when you are

sleeping. Dr. Jansen and Dr. Gun-ther Lehmann, among others, have used electrocardiographs and elec-troencephalographs to demonstrate that bursts of sounds—even when mild enough at 55 decibels not to wake the sleeper—are recorded by the brain. And the autonomic nerv-ous system responds just as it does during the waking hours. The effect is to turn a long restorative slumber into a less beneficial series of cat-naps.

Chronically noise-interrupted sleep can have violent effects, particu-larly on aged or sick people. Dr. Julius Buchwald, a psychiatrist at Downstate Medical Center of the State University of New York, testi-fying before a state legislative com-mittee on jet noise, cited paranoid delusions, hallucinations, suicidal and homicidal impulses as some of the possible consequences.

Inaudible Sound. Intense noise or vibration at infrasonic levels (below the hearing range) also presents a potential threat to health. These low-frequency waves pass easily through an eight-foot-thick wall. Directly affecting the brain, they can cause headaches, loss of equilibrium, and nausea, as well as damage to the middle ear.

Some machines produce infra-sounds that are too small to have any effect. In recent experiments, how-ever, Vladimir Gavreau, head of the French government's Electro-Acou-sic Laboratory in Marseille, has found that old industrial ventilators, air-conditioning units and family

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WE'RE POISONING OURSELVES WITH NOISE

oil burners all may produce infra-sound at "dangerous" levels. The infra-sound generated in the oil burner, for example, is multiplied by the chimney, which acts as an organ pipe, then multiplied again by nearby rooms whose proportions are responsive to the resonance.

Such effects, Dr. Gavreau believes, may help explain such afflictions as "housewife headache."

At the other end of the scale is ultra-sound, made up of very short wavelengths, above hearing range. Recently, workers in an English factory began complaining of unac-countable headaches, fatigue and nausea. Measurements showed the noise volume to be a tolerable 76 to 80 decibels. When complaints per-sisted, scientists examined the drill-ing, welding, soldering and washing devices and discovered that high-intensity ultra-sounds were also being produced. Once these were got rid of by adjustment of the ma-chines, there was an immediate drop-off in symptoms.

Antidotes. Noise is a very real and growing national health problem, and steps must be taken to stop it. This will mean setting realistic health standards, and enforcing them. It will also mean redesigning a lot of machinery and equipment.

Suppression of noise depends on isolating the source and by simple mechanical readjustments eliminat-ing its vibrations, or changing the sound-wave energy into heat and dissipating it. Devices designed with noise-inhibition in mind usually cost

about five percent more to man-ure than their noisy counter-less than that when produced mass quantities. Thus a quiet p-lawn mower may run \$15 mo-quiet garbage truck, \$2400 mor-air compressor, \$500 to \$1000 depending on size.

A public demand for quiet is beginning to be felt. In 1968 Evinrude Company produced first quiet-model outboard m-which was mounted on rubber-fired its noisy exhaust into the v-instead of the air. "But outb-owners want noise—it gives th-sense of speed," some said. Yet first year more quiet Evinrude boards were sold than all its r-competition combined.

The San Francisco Bay Ar-one of the most noise-conscious in the United States—is buildi-new rapid-transit system. An air-company won the contract for signing and building the new-which will cost considerably n-than previously used standard One feature promised to the pu-was that the cars would be q-and it looks as if they will be.

In the past, whenever limitat-for traffic, construction and ind-trial noise have been discussed, figures mentioned have usually b-between 85 and 90 decibels. I-says Dr. Rosen, "If a level is to-set, it should be set where it eliminate the health hazard." the light of present medical kno-edge, that means a 70-decibel lir-Many U.S. states, cities and tov-

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